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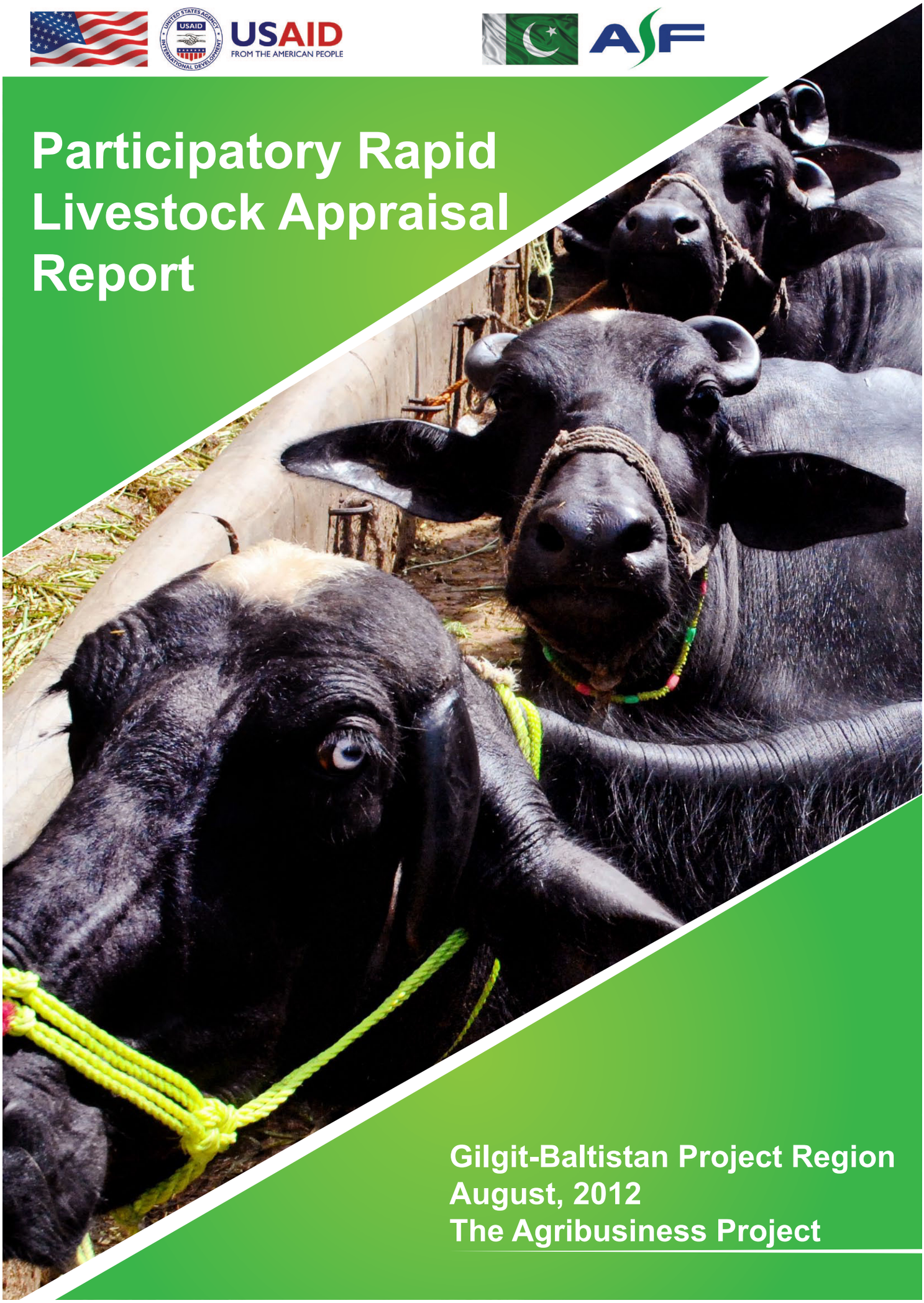
Participatory Rapid Livestock Appraisal Report



Gilgit-Baltistan Project Region
August, 2012
The Agribusiness Project

Acronyms

ASF	Agribusiness Support Fund
FAO	Food and Agriculture Organization
FGD	Focused Group Discussion
GB	Gilgit-Baltistan
GDP	Gross Domestic Product
L&DDD	Livestock and Dairy Development Department
NGO	Non-Governmental Organization
PRLA	Participatory Rapid Livestock Appraisal
TAP	The Agribusiness Project
USAID	United States Agency for International Development

Disclaimer: This participatory Rapid Livestock Appraisal report of Gilgit-Baltistan Project Region is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of The Agribusiness Project and do not reflect the views of USAID or the United States Government.

Table of Contents

List of Tables

List of Figures

Executive Summary

The Agribusiness Project funded by USAID Pakistan is being implemented by Agribusiness Support Fund (ASF) in collaboration with international and national partner organizations. This five years project commenced on 10th November, 2011 and aims at increasing competitiveness and productivity of horticulture and livestock sub-sectors in Pakistan. The overall goal of the Project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders. During the first year of the project, a preparatory program was undertaken to gauge the potential of the sub-sector and to prioritize value chains for various project regions including the Gilgit-Baltistan Project region. Findings from the Participatory Rapid Livestock Appraisal (PRLA) will enable the project to identify and prioritize livestock value chains, opportunities, constraints and state of the business development services to provide required basis for focusing project interventions.

Within the framework of the cluster and value chain approach, a two-pronged approach was adopted, first preparation for PRLA exercise in the field and second collection secondary data and development appropriate tools for quantification of factors to be measured on a scale for ranking/prioritization. This report pertains to work completed based on and primary appraisals of livestock sub-sector. Secondary data for livestock is not available for GB region.

The PRLA methodology provides for probing, analysis and validation of information as they unfold during the field work. Seven factors were applied for the quick analysis of the sub-sector. These include; (i) extent of employment generation; (ii) commercial worth; (iii) percentage of small farmers associated; (iv) women involvement; (v) households associated with the value chains; (vi) understanding growth potential; and (vii) vulnerability of the concerned value chains. Covering 50% of the districts, the exercise was undertaken in the randomly selected settlements/villages within each cluster/region. Each focus group consisted of 10-15 stakeholders, a representative sample of sub-sector, whereas, 2-3 FGDs were carried out in each district.

Prior to the primary data analysis, an appraisal of the livestock subsectors was conducted based on the secondary data available to develop objective criteria for the prioritization of the subsectors within livestock milk, meat, byproducts and fisheries value chains. The indicators used for analysis included i) Growth of the subsector on provincial (GB) level in past five years; ii) Pakistan`s share in the world production; iii) GB share in Pakistan; iv) Productivity Gap; v) Employment potential or labour intensity; and vi) NPC or national production cost calculated by comparing the price in national and international markets. As per analysis on the basis of secondary data, Pakistan's share in world production was 4.82% in milk, 2.17% in beef, 3.13% in mutton meat, 0.24% in fish, 17.91% in buffalo hides, 1.93% in cattle hides, 4.93% in goat skins and 1.85% in sheep skins.

Primary data for GB Project Region was collected through 12 FGDs in four different districts, involving all groups of stakeholders within the value chains. Livestock and fisheries value chains were then analysed and prioritized using grid analysis on the basis of seven factors that included percent employment opportunities, percent commercialization, percentage of small farmer involvement, percent women involvement, percentage of pre and post production losses, growth observed over past five years and percentage of household involvement in a particular value chain.On the basis of the analysis, milk ranked highest on the priority index with 2.73 points, followed by meat at 3.51 points. Livestock byproducts had 5.79 points.

Within the perspective of ASF's strategic objectives, one or all of these prioritized value chains might be selected by the project for baseline study and detailed analysis.As a part of the PRLA exercise the analysis and ranking of potential priorities and constraints, in all value chains, was carried out during FGDs using paired ranking technique. Dairy farming demand in the national market along with breed improvement and better farm management practices were among the top opportunities that need to be employed in order to enhance the capacity of livestock sector and growth of the value chains. Livestock managment practices, inadequate venteniary services and shortage of food has been identified as a major constraints.

Further, an assessment of the market linkages and the services provided was also carried out. Strength of the market linkages was determined by the share of produce in that particular market and cost of transportation.

Introduction

Background

The Agribusiness Project funded by USAID, is being implemented by Agribusiness Support Fund (ASF) in collaboration with International and national partner organizations. This five years project, commenced on 10th November, 2011 and aims at increasing competitiveness and productivity of horticulture and livestock sub-sectors in Pakistan. The overall goal of the Project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders.

The Agribusiness Projects objective is to: i) To strengthen the capacity in horticulture and livestock value chains to increase sales to domestic and foreign markets; ii) Strengthen capacity of small holder and enterprises to operate autonomously and effectively; and ; iii) increased agriculture/livestock efficiency and productivity through adoption of new farming techniques and technological innovations among targeted beneficiaries. Project activities encompass focused technical and capacity building assistance to upgrade and strengthen capacities in the priority value chains in both livestock and horticulture sectors; and a national cost sharing grants program offering a wide range of customized assistance to key players within the priority value chains.

During the first year of the project, a preparatory program was undertaken to gauge the potential of the sub-sector and to prioritize value chains for various project regions including the Gilgit-Baltistan Project region. PRLA is a short cut yet efficient method for data collection. It is a methodology for action research that uses a range of techniques and plays an important role in probing, developing, analyzing and using indigenous knowledge as a foundation from which to build more productive, valid and sustainable platform for the field work. Findings of the PRLA will enable the project to identify and prioritize livestock value chains, opportunities, constraints and state of the business development services to provide required basis for focusing project interventions.

The livestock sector is broad and covers highly diverse agro-ecological, social and economic dimensions across countries, regions and continents. In Pakistan, livestock is an integral component and considered as the backbone of the agriculture sector, as in any other agricultural economy. The livestock accounts approximately 55.1% of the agriculture value added and 11.5% to the Gross Domestic Product (GDP). Almost 35-40 million rural households are dependent on livestock for their livelihood, deriving 30-40%of their income from livestock. The primitive state of infrastructure and technology catalysed by the limited availability and high cost of inputs has halted the growth of a polymorphic, high value livestock sub sector that, if driven in the right direction, can contribute towards food security, import substitution, export led growth and poverty alleviation through employment generation. Pakistan has immensely large livestock resources and there is need to exploit and utilize these resources for the substantial growth of the sector. There is a need to focus on understanding productivity gaps, factors blocking development and expansion of livestock value chains, to identify hurdles causing bottlenecks, uncertainties and inefficiencies that hinder competitiveness. Interventions are required across all nodes of the livestock value chains, especially value addition, processing and marketing in order to increase the competitiveness and enhance capabilities of value chain operators to respond to domestic, regional and international markets.

The reports articulate for each region separately to enable better targeting and focusing project interventions. This report covers the project region of Gilgit-Baltistan. Within the framework of the cluster and value chain approach, a two-prong approach was adopted, first preparation for PRLA exercise in the field and second to collect secondary data and develop appropriate tools for quantification of factors so that it can be measured on a scale for ranking/prioritization. This report pertains to work completed based on both secondary data and primary appraisals of Livestock sub-sector.

Objectives

The objectives of PRLA exercise were to a) identify and prioritize the key livestock value chains in terms of growth potential and capability to benefit as many stakeholders across the value chains b) Identify relevant constraints impeding the realization of opportunities c) assess current state of the extension services to the livestock farmers and d) explore linkages of key livestock stakeholders with the local and national markets.

The PRLA was conducted with a view to prepare the stage for focusing project intervention as well as for the project baseline and value chains benchmarking studies. The PRLA results will enable the project to prioritize value chains (validating the cluster approach), set benchmarks, and support establishment of a database to generate primary data on key indicators to be maintained and updated during the course of project implementation and afterwards supporting the planning, monitoring, evaluation and communication functions of the project.

Methodology and Approach

The consultant(s) assisted the project staff in undertaking a strategic exercise for identification and prioritization of the value chains to prepare a stage for the baseline study and in close consultation with the project management adopted the following methodology to undertake the PRLA exercise:

Data Collection Tools and Techniques
The PRLA team developed and pre-tested tools for undertaking the rapid appraisal exercise in project regions. These tools included;

i) A five factored grid analysis matrix
ii) Paired ranking matrix for opportunities and constraints
iii) Venn-diagrams for mapping market linkages and service providers:

These tools were pre-tested in the field before being applied to collect primary data by holding Focus Group Discussions (FGDs) with selected groups of relevant stakeholders such as livestock farmers, inputs suppliers, processors, traders, retailers

Sample Size
The PRLA exercise was undertaken in all project regions to validate production clusters and establish priority value chains on a regional level. 2-3 FGDs were facilitated and conducted in randomly selected settlements/villages within each cluster/region, covering approximately 50% of the districts in each region. A group of 10-15 stakeholders related to the livestock value chains participated in each FGD.

Staff Orientation and Pre-Testing of Tools
The training workshop on the orientation to designed tools, FGD facilitation and data collection techniques; and a real pre-testing field exercise followed by a debriefing session has been organized for the project staff involved to help them understand and discuss the constraints faced during the exercise in order to revise and improve the tools and techniques.

Primary Data Collection
12 FGDs were organized and facilitated by trained project staff in randomly selected clusters from within 07 districts of Gilgit-Baltistan Project Region. The participants of FGDs that represented stakeholders from each node across the livestock value chains selected and prioritized value chains through mutual consensus during group discussions thatwere held and facilitated by the project teams.

Backstopping and Monitoring
A continued coaching and backstopping support has been provided to the project staff during orientation, pre-testing and PRLA exercise in project target regions.

Data Analysis and Reporting
The primary data gathered via field investigations through observations and FGDs was recorded using pre designed tools and later reproduced in tabulated form using MS Excel sheets. The final analysis was done by applying statistical tools to the primary data and showed in the form of bar graphs and tables to provide a highlighted outlook on the weakness and strengths of the livestock value chains. Secondary data for GB, Livestock was not available therefore, all the analysis has been done on the basis of Primary Data.

Appraisal of Livestock and Fisheries Value Chains based on Primary Data

Selection and prioritization of the value chains

This process was carried out to identify the value chains that offer most promising prospect for economic growth and poverty alleviation through employment generation. It was based on the review of the key issues that have an impact on the development of the livestock value chains and the capacity of a given region to produce and market livestock products and byproducts in the domestic and international markets. The choice of the value chains was further refined by applying priority criteria, weighting their relative importance and ranking on score sheet based on the composite index that was calculated on the basis of seven factors used in the grid analysis. A graphical illustration of the summarized overview of prioritization is shown in Figure 1 given below.

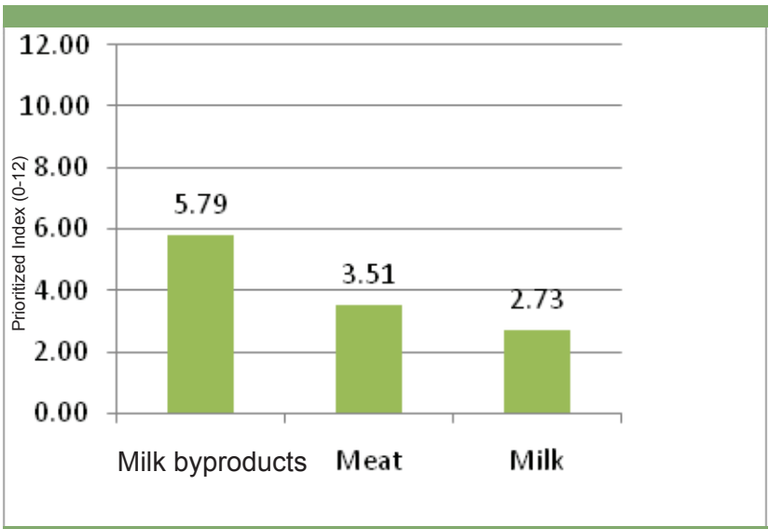


Figure 1: Prioritiztion of livestock and dairy value chains
Source: PRLA activitiy August, 2012

The prioritization index shows the milk byproducts rated as top with 5.7 points followed by meat and milk as being placed on second and third slot with 3.5 and 2.7 points respectively.

Milk is mostly produced in Gilgit, Ghizer and Diamer districts. However, milk production on commercial scale is practiced only in Gilgit District. It was observed that Diamer and Ghizer also showed medium to high potential for dairy value chain where the growth in milk production over past five years was 12.5%. Dairy value chain involves maximum percentage (76.7%) of the households, generating a maximum 46.67% of employment among all livestock value chains.

The highest growth in meat value chain was observed in Diamer. Livestock meat value chain provides 33.5% employment opportunities and involves 43% of the households in the region. As regard to the livestock byproducts, the data collected through FGDs showed a growth in livestock byproducts was recorded as 12.5%. The percentage of households involved in this value chain is 76.67% and generates 46.6% employments.Inland Fisheries is practiced in Ghizer, Astore and Diamer Districts of GB. FGDs conducted showed a maximum growth of 5% in fisheries value chain over the past five years. With regard to the inland fisheries the household involvement ranges from 2% to13.75% (i.e. 2% for fish, 2.50% for carp and 13.75% for trout) and similarly 5 to15% employment generation was recorded respectively.

Factor wise prioritization of the value chains

Ranking of the livestock and fisheries value chains was carried out on the basis of following seven factors used in the grid analysis matrix.

Prioritization on the basis of percentage employment potential

Prioritization of different livestock and fisheries value chains with regard to their ability to create employment is shown below in Figures 2 and 3 respectively. Among all livestock value chains, milk byproduct has the highest potential of 46.67% for employment generation. Meat value chain has the ability to create 33.5% employments, followed by fisheries value chain and milk value chains that have a potential to create 15% (carps Fish) and 11.43% employments respectively.

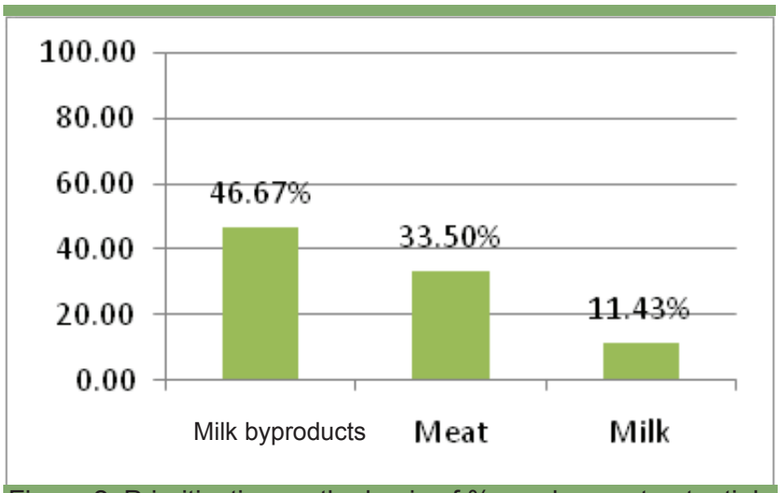


Figure 2: Prioritization on the basis of % employment potential in livestock and dairy sector
Source: PRLA activitiy August, 2012

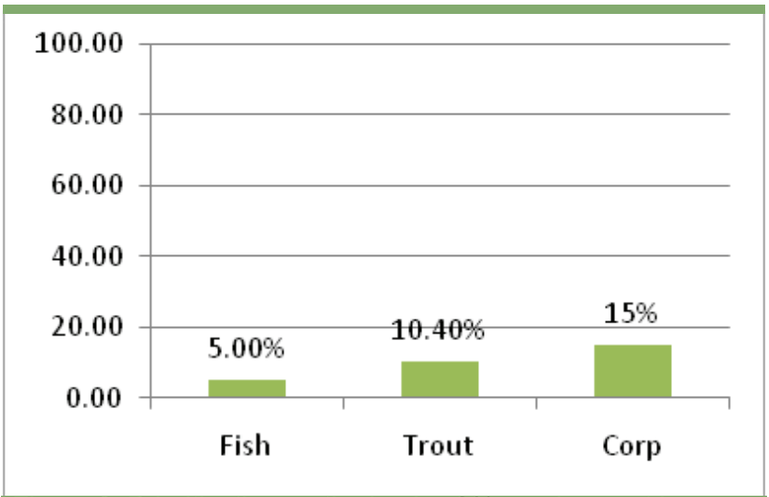


Figure 3: Prioritization on the basis of % employment in Fisheries sector
Source: PRLA activitiy August, 2012

Prioritization on the basis of percentage commercialization

Commercialization can be described as the percentage of the product that is marketed. The data collected from FGDs showed that inland fisheries is practiced as an enterprise and has 99% commercialization followed by meat having 40.4% commercialization. Milk byproducts score 35% commercialization. Figure 4 and 5 shows the prioritization of the fisheries and livestock value chains on the basis of their commercialization.

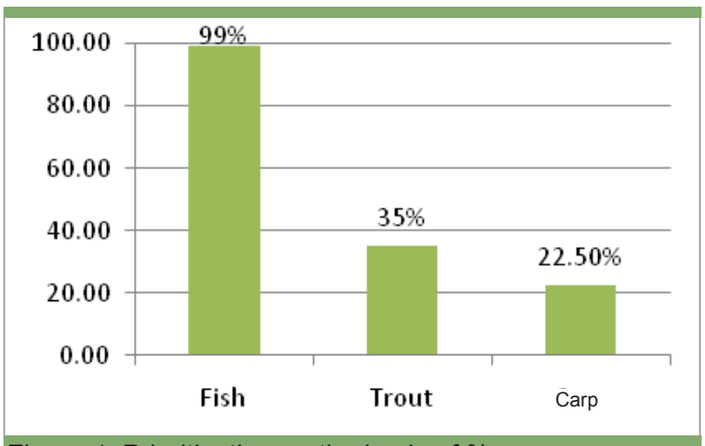


Figure 4: Prioritization on the basis of % commercialization in fisheries sector
Source: PRLA activitiy August, 2012

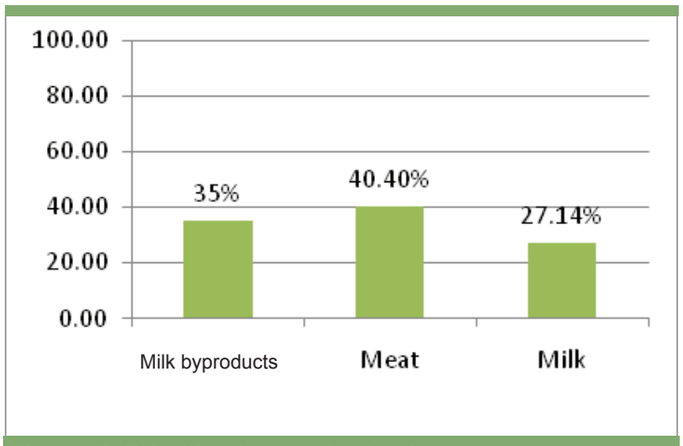


Figure 5: Prioritization on the basis of % commercialization in livestock and dairy sectors
Source: PRLA activitiy August, 2012

Prioritization on the basis of percentage small farmer involvement

The assessment of livestock value chains on the basis of small farmer involvement in GB Project Region revealed that milk byproducts and fish value chains have the highest percentage (100%) of small farmer's involvement. This is easily explained by the fact that 100% of milking animals belong to small holders who keep 1-4 animals. Whereas, 60% and 40.71% of small farmers are involved in milk and meat business. Figure 6 and 7 below shows the graphical presentation of above data respectively.

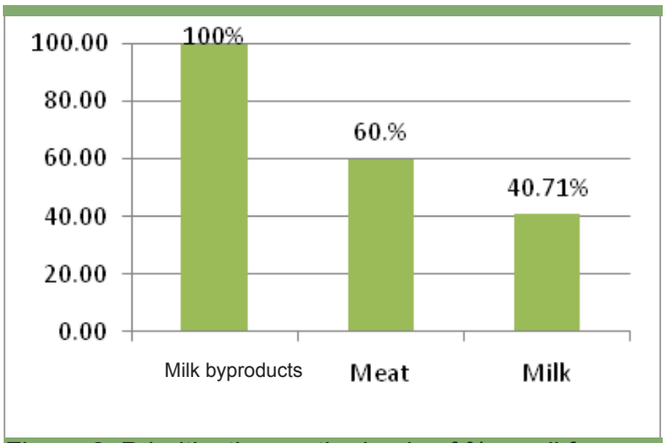


Figure 6: Prioritization on the basis of % small farmers involved in livestock and dairy sectors
Source: PRLA activitiy August, 2012

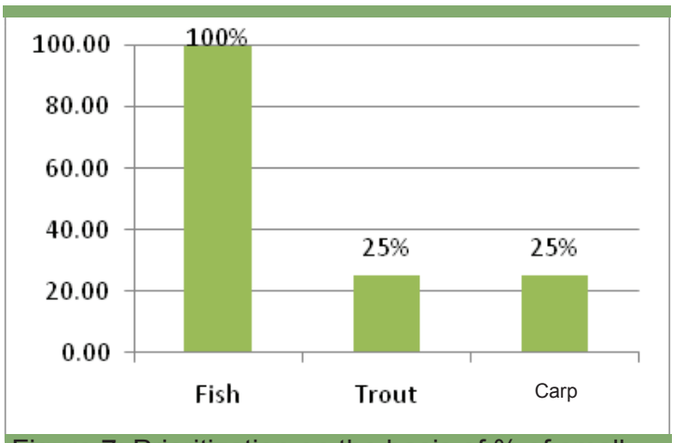


Figure 7: Prioritization on the basis of % of small farmers involved in fisheries sector
Source: PRLA activitiy August, 2012

Prioritization on the basis of percentage women involvement

Women involvement is considered to be an important factor for prioritization of the value chains. As per FGDs data, it was found that milk byproduct value chain has the highest priority index (80%) with regard to the percentage of women involved. There is no women involvement in fish value chain. Percentage of women involvement can be seen in the Figure 8 below.

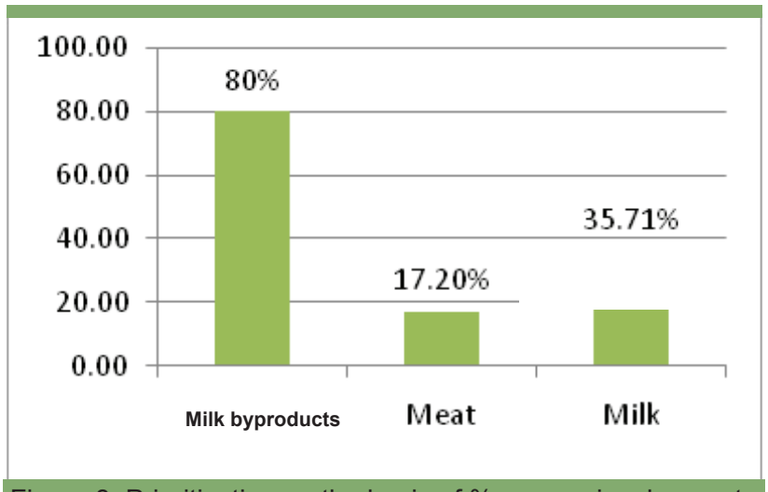


Figure 8: Prioritization on the basis of % women involvement in livestock and dairy sector
Source: PRLA activitiy August, 2012

Prioritization on the basis of percentage growth during past five years

Growth is the most important factor for prioritization of value chain as it gives a clear idea of the potential for subsector in a particular region. The livestock and fisheries value chains were assessed on the basis of their growth observed during the past five years in GB Project Region. Figure 9 below reflects 12.50%, 11.86% and 10.33% growth rates for milk byproducts, meat and milk value chains respectively during the past five years.

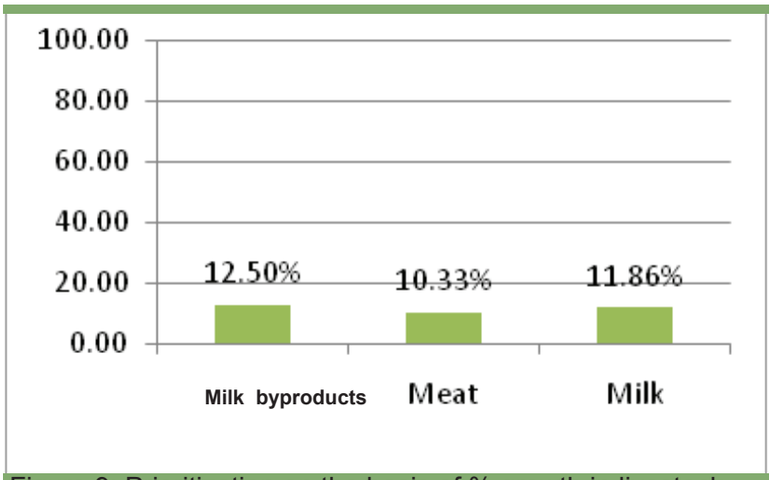


Figure 9: Prioritization on the basis of % growth in livestock and dairy sectors
Source: PRLA activitiy August, 2012

Furthermore, Figure 10 below indicates an overall increasing growth rate in fish production in GB except Carp and Trout. Negative Growth in Carp fish in GB is attributed to three factors;

- Genocide of fish due to floods and no rehabilitation
- Excessive use of explosives (Dynamites etc) and other unsustainable fishing methods including electrocution
- No or inadequate propagational work by Fisheries Department in throwing fingerlings of this fish in streams, lakes etc

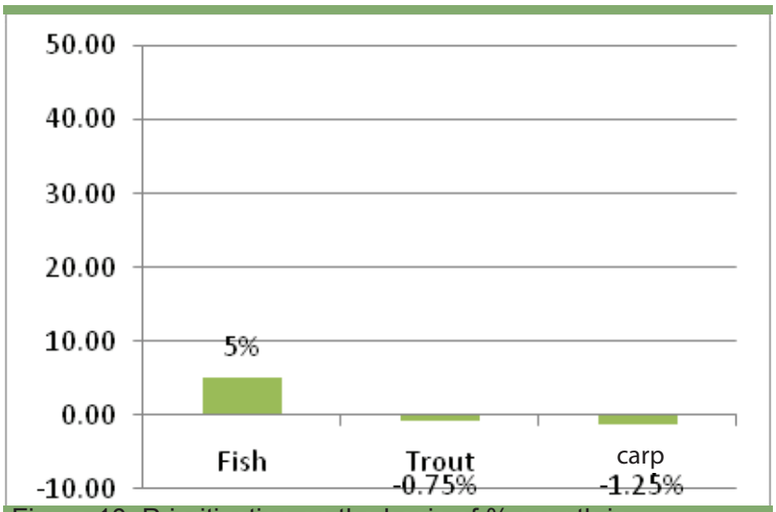


Figure 10: Prioritization on the basis of % growth in fisheries sector
Source: PRLA activitiy August, 2012

Prioritization on the basis of percentage losses

Pre and Post production losses have a high impact on the selection and prioritization of a particular commodity or value chain. Trout (Fish) value chain showed highest percentage of losses (15%) among fisheries value chain. Meat value chain had 10.90% losses as compared to milk and byprodcts . An illustration of prioritization of value chains on the basis of percentage losses is portrayed in Figures 11 and 12 below respectively.

The losses in milk, meat and byproducts include both pre and post production losses. Pre-production losses mean mortality or inability of animal to produce due to various reasons whereas post production losses occur usually during handling and transportation and are highest in trout. Losses in meat value chain usually attribute to pre-production losses. Losses in livestock byproducts value chain are far higher than depicted in the %losses index as they usually go un-noticed. Fisheries value chain experience more post production losses due to the perishable nature and lack of proper mode of transportation to the market.

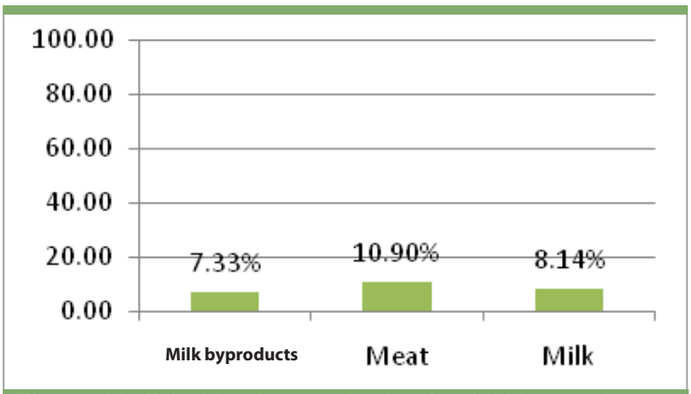


Figure 11: Prioritization on the basis of % losses in livestock and dairy sectors
Source: PRLA activitiy August, 2012

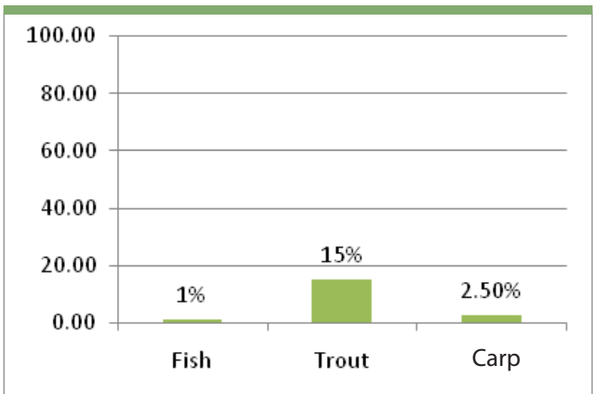


Figure 12: Prioritization on the basis of % losses in fisheries sector
Source: PRLA activitiy August, 2012

Prioritization on the basis of percentage household involvement

Percentage of households involved is another important factor in the process of prioritiztion a particular value chain. The data collected through FGDs and analysed for the percentage household involvement in livestock and fisheries value chains. As illustrated below in Figure 13, milk byproduct value chain had the highest index of 76.67% household involvement since majority of the rural population is engaged either directly or indirectly in milk value chain. Second on the priority index was the meat value chain involving 43.5% household. Milk value chain engages 40% of the households in GB.

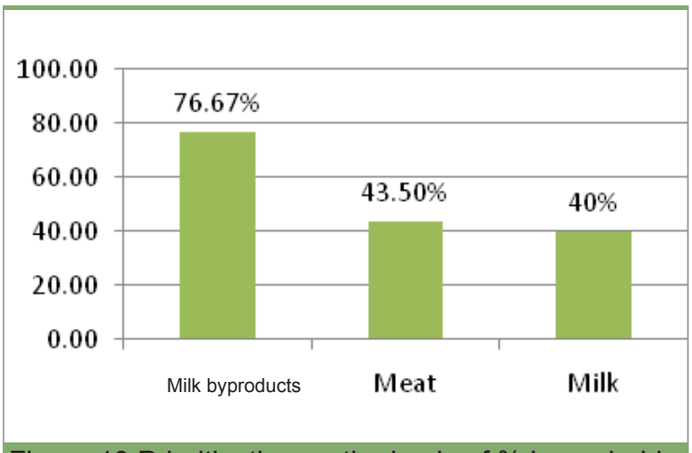


Figure 13:Prioritization on the basis of % household involvement in livestock and dairy sectors
Source: PRLA activitiy August, 2012

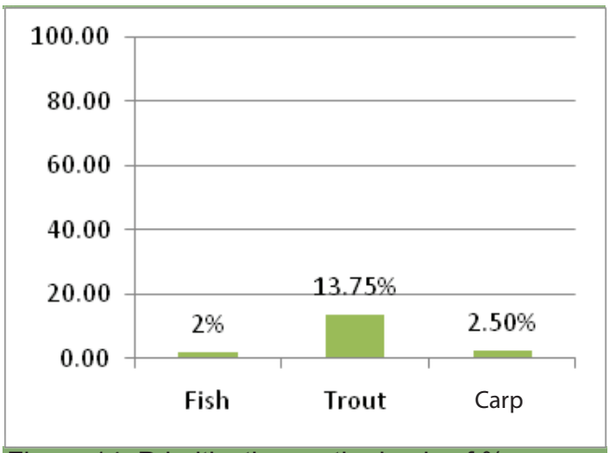


Figure 14: Prioritization on the basis of % household involvement in fisheries sector
Source: PRLA activitiy August, 2012

Prioritized Opportunities and Constraints in Livestock and Fisheries Value Chains

Paired ranking tool was used for prioritization of the opportunities. The participants of FGDs ranked the list of opportunities as explained in Table 1 below. On the basis of FGDs data analysis, dairy farming, capacity building, processing were some of the main areas having highest potentials for improvement and value addition. Apart from this, improved breed, bringing barren lands under cultivation, silage making, artificial insemination, transportation to the market and cultivation/introduction of improved fodder varieties were told to be the potential areas for intervening. Table 1 below shows the prioritized opportunities in milk, meat and fisheries value chains.

Table 1: Priority opportunities in meat,milk and fisheries value chains

Priority opportunities	Score	Rank
Dairy farming	12	1
Capacity building	11	2
Processing	10	3
Improved breed	9	4
Barren lands for fodder cultivation	8	5
Silage making	7	7
Artificial insemination	6	8
Transportation to the market	5	9
Fodder crops introduction	4	10

Source: PRLA activitiy August, 2012

The constraints in milk, meat and fisheries value chains were identified and prioritized by the participants in FGDs. Table 2 below shows a ranking index for the constraints.

Table 2: Priority constraints in meat, milk and fisheries value chains

Priority constraints	Intensity
Weak ventilation and improper shed management	High
Diseases	High
Inadequate veterinarian sources	High
Fodder shortage for winter	High
Very few meat/milk markets	High
Lack of milk/meat preservation skills/processing facility	High
Lack of improved breed	High
Low/poor milk yielding breeds	Medium
Poor market linkages	Medium
Lack of technical and financial resources	Medium
Unavailability of livestock medicines	Medium
Lack of proper milk transportation system	Medium

Source: PRLA activitiy August, 2012

Lack of proper shed management practices, diseases inadequate veterinary sources, fodder shortage, market linkages and preservation technologies were ranked as high intensity constraints.

These constraints can be addressed through breed improvement (either by introducing high yielding animals or cross breeding with high producing breeds), improved farm management practices, timely and efficient availability of veterinary health services, establishment of integrated milk collection and transportation system. Easy access to soft loans can help resolve financial issues hampering the growth of dairy value chain.

A strategic approach to exploit opportunities and address constraints is required for meat,milk and fisheries value chains to flourish as viable agribusiness in order to address food security issues and export led growth.

State of the Service Providers

Service providers are of prime importance in all the value chains. These include Government bodies, private sector, NGOs and associations, middlemen, buyers, market agents and exporters. A detailed assessment of the service providers, services offered and their strength (determined by their availability, efficiency of services and if those are free, on cash or credit) in GB Project Region, was carried out using the information provided by the participants of FGDs during PRLA exercise. The role of Government organizations such as Livestock and Dairy Development Department and Fisheries Department is to provide technical information and assistance, on farm and off farm trainings and creating awareness about technological innovations relevant to a particular sub sector.

The participants of FGDs provided information about the service providers for dairy, livestock and fisheries value chains and ranked them as shown in Table 3 below:

Table 3: State of the service providers

Service Provider	District	Strength	Paid/Free	Services Provided
Livestock and Dairy Development Department/Fisheries Department	Gilgit	Medium	Free	Training and technical assistance
	Skardu	Medium	Free	
	Astore/Chillas	Medium	Free	
Input suppliers	Gilgit	Medium	Cash	Input Supplies
	Skardu	Medium	Cash	
	Hunza	Medium	Cash	
	Chillas	Medium	Cash	
Middlemen	Gilgit	Strong	Credit	Intermediate link between producers and market
	Skardu	Strong	Credit	
	Hunza	Strong	Credit	
	Chillas	Strong	Credit	
NGOs	Gilgit	Strong	Free	Training and technical assistance
	Skardu	Medium	Free	
	Hunza	Medium	Free	
	Chillas	Low	Free	
Veterinary medicine companies	Gilgit	Weak	Cash	Supply vet medicines, vaccines etc.
	Skardu	Weak	Cash	

Source: PRLA activitiy August, 2012

State of the Market Linkages

Market linkage plays an important role in prioritizing value chains in a particular region. It also helps determine the price of a particular produce and profitability. To understand the marketing of livestock and its products, an assessment regarding the strength of market linkages was also done through FGD`s collected data in GB Project Region and is depicted in the Table 4 below:

Market linkages were assessed and ranked as strong, medium or weak depending on the basis of share of the produce in that particular market, distance from the production site and the cost of transportation. With regard to milk and meat value chains, local markets had the strongest and medium links in the three districts of GB Project Region due to easy access, less cost of transportation and less losses.

Table 4: State of the market linkages

Subsector	District	Linked Market	Strength
Milk and meat	Gilgit	Gilgit	Medium
Milk and meat	Ghizer	Gahkuch, Gilgit	Strong/Medium
Milk and meat	Diamer	Chilas	Medium

Source: PRLA activitiy August, 2012

Conclusion

Livestock rearing in GB is practiced mainly in Ghizer, Gilgit and Diamer District where significant number of people are highly dependent on livestock keeping for milk, meat and milk by-products both for commercial purpose and domestic usage, thus giving employment to a considerable percantage of people.

Inland Fisheries is practiced in Ghizer, Astore and diamer Districts of GB but on a very limited scale. Mostly fish is reared for commercialization but exceptionally for self-usage.

Based on PRLA, the following conclusions can be drawn:

- Mechanism for rehabilitation of fish due to floods can be formulated and implemented

- Excessive use of explosives (Dynamites etc.) and other unsustainable fishing methods including electrocution can be sanctuarized.

- Fisheries Department should be made functional and equipped for propagation work by throwing fingerlings of the fish in streams, lakes etc.

- Livestock rearing can be promoted in GB by working on value addition side, injecting improved livestock husbandry techniques, introducing/promoting artificial insemination methods and fodder cultivation for coping up with fodder scarcity.

- Promotion/introduction of the milk and meat preservation techniques and facilities in the area will serve as a catalyst for boosting of the livestock business in the GB.

- Marketing mechanism can be emplaced for supporting local livestock keepers/producers in linkages development with markets and creating market facilities for them locally,

- Fisheries can be promoted by re-promoting tourism in the area and market linkagaes of associated people at domestic and international level.

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